

In the claims

Claims 1-60 (Canceled)

61. (New) A capacitor having a dielectric layer positioned between a first electrode and a second electrode, wherein the dielectric layer comprises a lower diamondoid-containing polymerized material, and wherein the lower diamondoid is triamantane.

62. (New) A capacitor having a dielectric layer positioned between a first electrode and a second electrode, wherein the dielectric layer comprises a lower diamondoid-containing material selected from the group consisting of a lower diamondoid-containing sintered ceramic, a lower diamondoid ceramic composite, and a self-assembled lower diamondoid film.

63. (New) The capacitor of claim 62, wherein the lower diamondoid is selected from the group consisting of adamantane, diamantane, and triamantane.

64. (New) A capacitor having a dielectric layer positioned between a first electrode and a second electrode, wherein the dielectric layer comprises a higher diamondoid-containing material.

65. (New) The capacitor of claim 64, wherein the higher diamondoid of the higher diamondoid-containing material is selected from the group consisting of tetramantane, pentamantane, hexamantane, heptamantane, octamantane, nonamantane, decamantane, and undecamantane.

66. (New) The capacitor of claim 64, wherein the higher diamondoid-containing material is selected from the group consisting of a higher diamondoid-containing polymer, a higher diamondoid-containing sintered ceramic, a higher diamondoid ceramic composite, a CVD higher diamondoid film, and a self-assembled higher diamondoid film.

67. (New) A capacitor having a dielectric layer positioned between a first electrode and a second electrode, wherein the dielectric layer is a diamondoid-containing material comprising a mixture of lower and higher diamondoids, wherein the lower diamondoid is selected from the group consisting of adamantane, diamantane, and triamantane, and wherein the higher diamondoid is selected from the group consisting of tetramantane, pentamantane, hexamantane, heptamantane, octamantane, nonamantane, decamantane, and undecamantane.

68. (New) The capacitor of claim 67, wherein the diamondoid-containing material is selected from the group consisting of a diamondoid-containing polymer, a diamondoid-containing sintered ceramic, a diamondoid ceramic composite, a CVD diamondoid film, and a self-assembled diamondoid film.

69. (New) The capacitor of claim 61, wherein the capacitor is a part of a random access memory device.

70. (New) The capacitor of claim 62, wherein the capacitor is a part of a random access memory device.

71. (New) The capacitor of claim 64, wherein the capacitor is a part of a random access memory device.

72. (New) The capacitor of claim 67, wherein the capacitor is a part of a random access memory device.